January 26, 2001
Ref. No.: EOS/ETS-0202-C01

National Aeronautics and
Space Administration
Goddard Space Flight Center
Greenbelt, Maryland 20771

Attention: Mr. Willie Fuller
                  Code 581
                  Building 32, Room N212D

Subject: Contract No.: NAS9-98100
                  CSOC ETS Completion Form Task
                  EOSDIS Test System (ETS) Simulated CCSDS Telemetry Generator
                  (SCTGEN) -- Delivery of the Patch Release 2.5 Software

Dear Mr. Fuller:

The CSOC contractor is pleased to deliver Patch Release 2.5 of the Simulated CCSDS
Telemetry Generator (SCTGEN) of the ETS. Release 2.5 of SCTGEN provides solutions
to five Discrepancy Reports (DRs), all in support of PM-1 and ICESat missions.

The delivery package contains 5 attachments as listed below, describing the delivery
contents, build instructions, resolved DRs, and release history. A completed Mission
Systems Configuration Management (MSCM) form is included.

If you have any questions concerning this delivery, please call me at (301) 805-3609.

                              Sincerely yours,

                              Chii-Der Luo
                              Tools and Special Facilities Manager

Delivery Package Reviewed by:

Joe Polesel
Simulation Group Sustaining Engineer Manager

Delivery of the Release 2.5 Software
January 26, 2001, Ref. No.: EOS/ETS-0202-C01
EOSDIS Test System (ETS) Simulated CCSDS Telemetry Generator

Page Two

The following attachments contain the details of the SCTGEN software.

Attachment A   - contains the instructions to build and install the software
Attachment B   - contains a list of the resolved DRs
Attachment C   - contains the release history summary matrix
Attachment D   - contains a file name listing of the delivery contents
Attachment E   - contains the Mission Systems Configuration Management (MSCM)
                  form

Distribution: (* - Letter Only)

NASA	HTSI	Lockheed Martin	CSC
Fuller, W. *	Bradbury, T.*	Cordier, G.	Noone, E.
Harbaugh, R.*	Luo, C.		Polesel, A.
Iona, G.*	Braun, J. *		Shurie, E.
Johns, A.*	Zarek, J. *	TRW	Swope, J.*
Kelly, A.			Whitesell, S.*
Ondrus, P.*		Tiren, C.	Task File.
ESDIS Library	Unisys		
	Coleman, C.	Raytheon	Caelum
QSS		Singhal, S.	Holmes, D.
Elfant, C.	NYMA		Siskind, A.
Walters, A.			
	Chomko, E.		

Attachment A — Release 2.5 Build Instructions

SCTGEN consists of two elements: (1) the SCTGEN Graphical User Interface, referred to as SCTGUI; and (2) the SCTGEN application software, referred to as SCTGEN. Instructions for building the complete system, SCTGEN Release 2.5, step by step, are contained in the following sections.

A.1   Introduction

The patch release SCTGEN Release 2.5 consists of 10 source files, which are being delivered on tape media. The file "globals.tcl" will replace the file of the same name in the $HOME/sctgui2.0/source/tcl directory. The file "CCSDS_Unsegmented.hh" will replace the file of the same name in the $HOME/sctgen2.0/CCSDS directory. The file "TigIFileDevice.hh" will replace the file of the same name in the $HOME/sctgen2.0/tcore directory. The files "DS_2Output.cpp", "DS_Output.hh", "ETS_Version.hh", "Gap.cpp", "Gap.hh", "ICESAT_Time.cpp" and "cuctime_to_cdstime.cpp", will replace the files of the same name in the $HOME/sctgen2.0/ETS directory. Note that SCTGEN Patch Release 2.5 can only be overlaid over SCTGEN Release 2.4.

A.2   Build SCTGEN

1) Change to the $HOME/sctgen2.0/work directory.
2) For the SGI platform, type "source sgi_btiger.cmd", for all other platforms type "source btiger.cmd", to build the first portion of SCTGEN. This will take about 10 to 15 minutes and will generate warning messages.
3) For the SGI platform, type "source sgi_bsctgen.cmd", for all other platforms type "source bsctgen.cmd", to build the second portion of SCTGEN. This will also generate warning messages.
4) Change to the $HOME/sctgen2.0/work directory and type "cp sctgen ~/sctgui2.0/bin/*platform*.sctgen2.0" to rename the SCTGEN executable, where *platform* is sgi, hp, or sun.
5) Change to the $HOME/sctgui2.0/bin directory.
6) Type "rm sctgen" to remove the current executable.
7) Type "ln –s ./*platform*.sctgen2.0 sctgen" to create a link to the executable, where *platform* is sgi, hp, or sun.

*For the HP platform:
For steps 2 and 3, do not type the sgi prefix.
For steps 4 and 7, replace "hp" for "sgi", or something comparable to denote host platform.

<u>*For the SUN platform:</u>
For steps 2 and 3, do not type the sgi prefix.
For steps 4 and 7, replace "sun" for "sgi", or something comparable to denote host platform.

Note: The file names may not be exactly the same depending on the platform. For example, different UNIX systems might have different header file extensions. Make sure that the correct files are replaced, otherwise, the changes will not take effect.

A.3   Supported platforms

Previous versions of SCTGEN have been built and tested using the environments listed below.

SUN platform:
-   SunOS Generic Version 4.3 including C++ compiler for SUN UNIX.

HP platform:
-   HP OS Version 9.0 including C++ compiler for HP UNIX.

SGI platform:
-   IRIX Version 6.2 including standard CFRONT compatible C++ compiler.

Attachment B — Resolved Discrepancy Reports

This attachment reflects the DRs that were addressed with SCTGEN Release 2.5. The DRs are listed in the table below by DR number, status, severity, subsystem name, short description, and related NCR number. A full description of each DR follows the summary table. Complete information on all DRs is maintained in the ESDIS Discrepancy Report Tracking Tool (DRTT), which can be accessed via the Internet at address http://iree.gsfc.nasa.gov/ddts/ (directly) or from the ESDIS Activities, Progress Reports and Schedules page at http://spsosun.gsfc.nasa.gov/ESDIShome.html.

Summary of Closed Discrepancy Reports

Critical(1)	Urgent(2)	Routine(3)
2	2	1

Status Definitions

N - New	A - Assigned Analysis	R – Assigned Resolution
D - Delivered	V - Verified	C - Closed
W - Withdrawn	P - Postponed	X - Duplicate

DR/IDR #	Status	Severity	Subsystem	Description	Related NCR
ETS0428	A	1	SCTGEN	Packet time goes backwards	
ETS0429	A	1	SCTGEN	CR ICESAT time conversion incorrect	
ETS0430	A	2	SCTGEN	CR gap times not converted	
ETS0431	A	3	SCTGEN	Version number should be updated with each release	
ETS0432	N	2	SCTGEN	Amsr-e fine time converted incorrectly	

*Total number DRs addressed=5

ETS0428

When generating simulated ICESAT packet data the time appears ok for a while, then it goes backward and resumes going forward for a while more, then repeats going backward. The appearance of going backward seems to be related to losing high order bits of a delta time.

ETS0429

The ICESAT time in the construction record is incorrect. The days from 1/1/58 to 1/1/00 are not accounted for, and the rest of the time field is off also.

ETS0430

The gap times in the construction record are not converted from their original format to GIIS. Any application using a non-GIIS format has an incorrect gap time in the construction record.

ETS0431

The version number (found in ETS/ETS_Version.hh) should be updated to reflect the current version number.

ETS0432

The Amsre fine time in the construction record is not converted correctly to cuctime format. The problem is in the file 'cuctime_to_cdstime.c"
Also, the files 'cuctime_to_cdstime.c' and 'cuctime_to_sctime.c' should be changed to cpp files to be consistent with the rest of the code. This requires only changing the name of the files (no code changes are necessary), and removing the lines in the .cmd files used to compile and link that specifically reference these 2 files. They would then be compiled with all the other .cpp files and not as special cases.

Attachment C — Release History Summary Matrix

The attached Release History Summary Matrix reflects the SCTGEN Release 2.5 Delivery.

Release History Summary Matrix										
SYSTEM:	SCTGEN								PAGE	1 OF 2
RELEASE NUMBER			1.0	1.1.0	1.2.0	1.3.0	1.4.0	1.5.0 (2.0)	2.1	2.2
DELIVERY DATE			3/3/97	5/27/97	8/25/97	2/27/98	6/26/98	9/10/99	11/30/99	2/2/00
CONFIGURATION ITEM	CI NO.									
SCTGEN GUI	5.1		1.0	1.1.0	1.2.0	1.3.0	1.4.0	1.5.0 (2.0)	2.1	2.2
SCTGEN Application Software	5.2		1.0	1.1.0	1.2.0	1.3.0	1.4.0	1.5.0 (2.0)	2.1	2.2

Release History Summary Matrix

SYSTEM:	SCTGEN									PAGE	2 OF 2
RELEASE NUMBER			2.3	2.4	2.5						
DELIVERY DATE			6/9/00	10/18/00	1/26/01						
CONFIGURATION ITEM		CI NO.									
SCTGEN GUI		5.1	2.3	2.4	2.5						
SCTGEN Application Software		5.2	2.3	2.4	2.5						

Attachment D - Listing of Delivery Contents

Delivery is on one 4 mm magnetic tape. The contents of the tar tape are listed below. Sections D.1 and D.2 contain the file name listings for the SCTGEN GUI and SCTGEN application software, respectively.

D.1 SCTGEN GUI Patch Release 2.5
globals.tcl

D.2 SCTGEN Patch Release 2.5
CCSDS_Unsegmented.hh
DS_2Output.cpp
DS_Output.hh
ETS_Version.hh
Gap.cpp
Gap.hh
ICESAT_Time.cpp
TigIFileDevice.hh
Cuctime_to_cdstime.cpp

Attachment E - Mission Systems Configuration Management Form

This attachment contains the completed Mission Systems Configuration Management (MSCM) form.

Mission Systems Configuration Management Form

1. ORIGINATOR	2. ORGANIZATION	3. PHONE	4. E-MAIL ADDRESS
Donald Holmes	CSOC	(301) 805-3547	Donald.Holmes@csoconline.com

5. ELEMENT		6. INSTALLATION PRIORITY	7. TRACKING NUMBER
Other ======> SCTGEN		Routine	(Assigned by CM Office)

8. SOURCE CHANGE REQUEST(S):	9. APPROVALS		
ETS DRB approved SCTGEN release for SMO DR closure.	Element Manager	_____	___ / ___ / ___
	Flight Ops Director	_____	___ / ___ / ___
	Operations Manager	_____	___ / ___ / ___

10. DELIVERED SYSTEM (Check all that apply)

	Name	Version	Media Identification	Identification Date
☐ Hardware	_____	_____	_____	_____
☒ Software	SCTGEN	R2.5	4 mm tape	1/26/01
☐ Database	_____	_____	_____	_____
☒ Documentation:				
Delivery Package		n/a	Via email	1/26/01
	_____	_____	_____	_____
	_____	_____	_____	_____
☐ Other	_____	_____	_____	_____

11. CHANGE DESCRIPTION

SCTGEN 2.5 addresses five DRs. None are workarounds.

12. ATTACHMENT(S): Check if YES ☒

Description: SCTGEN 2.5 delivery package (cover letter with attachments) dated 1/26/01.

13. CM OFFICE USE

	Location (Bldg/Room)	Slot location(s)
Hardware	____ / ____	_____
Media	____ / ____	_____
Documentation	____ / ____	_____
Installation date	___ / ___ / ___	CM Office Signature _____

Form MSCM (970327)